



### Let's Recall ...

The largest 6-digit number is 9,99,999. It is read as nine lakh ninety-nine thousand nine hundred ninety-nine.

- 1 Given below are the prices of some cars.



A

₹ 4,65,343



B

₹ 7,90,450



C

₹ 8,80,400



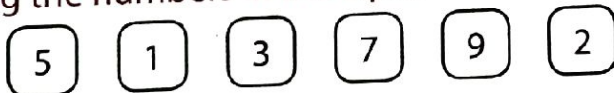
D

₹ 5,12,900

Write the price of each car in the table under the appropriate periods and also in words.

Car	Lakhs	Thousands	Ones	Price (In Words)
A	4	65	343	Four lakh sixty-five thousand three hundred forty-three
B				
C				
D				

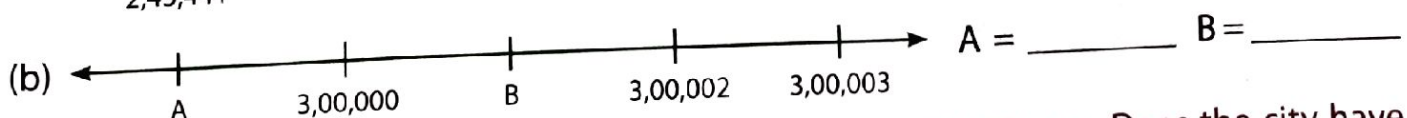
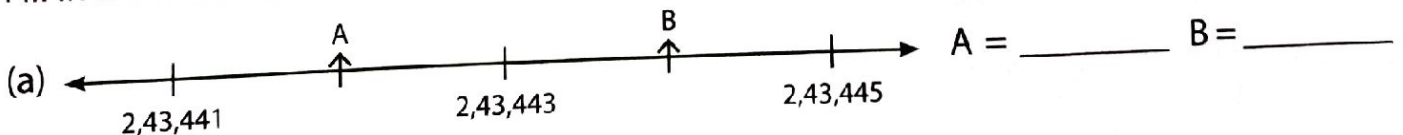
- 2 Using the numbers in the squares form:



(a) the largest 6-digit number

(b) the smallest 6-digit number

- 3 Fill in the missing numbers on the number line.



- 4 In the city of Hyderabad, there are 8,45,333 bikes and 6,44,900 cars. Does the city have more cars or bikes? How many more are they?





5 Write the place value of the underlined digit.

(a) 34,508 5 hundred or 500

(c) 73,692

(b) 8,05,680

(d) 9,54,316

6 Write the number names in the International number system.

(a) 932,431

(b) 37,340

(c) 481,234

(d) 516,074

7 Write 5,80,518 and 74,983 in the expanded form.

8 Arrange in ascending order.

(a) 4,30,395; 4,20,817; 4,53,164; 4,52,164

(b) 178,421; 78,375; 176,240; 275,189

9 Round off the given numbers to the nearest 100.

(a) 1,90,374

(b) 8,99,128

(c) 7,012

(d) 43,986

10 Round off the given numbers to the nearest 1,000.

(a) 8,453

(b) 23,863

(c) 5,86,037

(d) 9,00,239

## Counting up to Crores

The largest 7-digit number is 99,99,999. It is read as ninety-nine lakh ninety-nine thousand nine hundred ninety-nine.

$99,99,999 + 1 = 1,00,00,000$  which is the smallest 8-digit number. It is read as one crore.

The largest 8-digit number is 9,99,99,999. It is read as nine crore ninety-nine lakh ninety-nine thousand nine hundred ninety-nine.

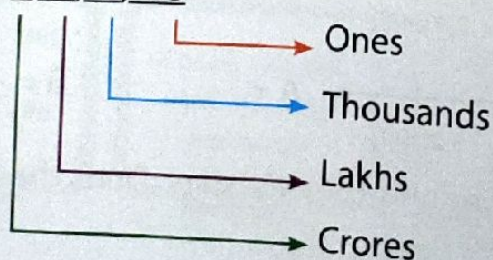
$9,99,99,999 + 1 = 10,00,00,000$  which is the smallest 9-digit number. It is read as ten crores.

Including crores, our place value chart will look like this.

CRORES		LAKHS		THOUSANDS		ONES		
Ten crores	Crores	Ten lakhs	Lakhs	Ten thousands	Thousands	Hundreds	Tens	Ones
(TC)	(C)	(TL)	(L)	(TTh)	(Th)	(H)	(T)	(O)

To write a large number such as 38546213, put commas to separate the periods of ones thousands, lakhs and crores.

3,85,46,213



### Quick Tip

Starting from the extreme right, put commas after the 3rd, 5th and 7th digits as you move left.





The number will be read as three crore eighty-five lakh forty-six thousand two hundred thirteen.

**Example 1:** Separate 23540295 into periods. Also, make the place value chart and write the number name.

**Solution:** Starting from the right, put commas after the third, fifth and seventh digit.  
2,35,40,295

CRORES		LAKHS		THOUSANDS		ONES		
Ten crores	Crores	Ten lakhs	Lakhs	Ten thousands	Thousands	Hundreds	Tens	Ones
TC	C	TL	L	TTh	Th	H	T	O
	2	3	5	4	0	2	9	5

Number name: Two crore thirty-five lakh forty thousand two hundred ninety-five

### Place Value

Consider the number 2,14,36,754.

The place value of

2 is 2 crores, i.e.	2,00,00,000
1 is 1 ten lakh, i.e.	10,00,000
4 is 4 lakhs, i.e.	4,00,000
3 is 3 ten thousands, i.e.	30,000
6 is 6 thousands, i.e.	6,000
7 is 7 hundreds, i.e.	700
5 is 5 tens, i.e.	50
4 is 4 ones, i.e.	4

**Example 2:** Write the place value of the underlined digit in the following numbers.

- (a) 13,42,86,205      (b) 8,05,24,342      (c) 8,92,46,313

**Solution:** (a) 13,42,86,205      The place value of 3 is 3,00,00,000 or 3 crores.  
(b) 8,05,24,342      The place value of 0 is always 0.  
(c) 8,92,46,313      The place value of 4 is 40,000 or 4 ten thousands.

**Example 3:** Find the sum and difference of the place values of 9 and 4 in 8,92,46,313.

**Solution:** The place value of 9 is 90,00,000.

The place value of 4 is 40,000.

The sum of place values = 90,00,000 + 40,000 = 90,40,000

The difference of place values = 90,00,000 - 40,000 = 89,60,000





## Expanded Form and Short Form

Expanded form of a number is the sum of the place values of its digits. To write the short form or standard form of an expanded number, write the face value of each digit in the correct place.

**Example 4:** Write (a) 5,46,32,817 and (b) 23,40,28,762 in the expanded form.

**Solution:**

(a) 5,46,32,817 = 5 crores + 4 ten lakhs + 6 lakhs + 3 ten thousands + 2 thousands + 8 hundreds + 1 ten + 7 ones  
 $= 5,00,00,000 + 40,00,000 + 6,00,000 + 30,000 + 2,000 + 800 + 10 + 7$

(b) 23,40,28,762 = 2 ten crores + 3 crores + 4 ten lakhs + 2 ten thousands + 8 thousands + 7 hundreds + 6 tens + 2 ones  
 $= 20,00,00,000 + 3,00,00,000 + 40,00,000 + 20,000 + 8,000 + 700 + 60 + 2$

**Example 5:** Express (a) 4 crores + 2 ten lakhs + 3 lakhs + 4 ten thousands + 1 thousand + 5 tens + 4 ones and (b)  $8,00,00,000 + 40,00,000 + 40,000 + 200 + 70 + 3$  in the short form.

**Solution:** (a) 4,23,41,054 (b) 8,40,40,273

## EXERCISE 1.1

- Write numbers for the given number names. Then draw a place value chart and write them in it.
  - Five crore thirty-two lakh fifty thousand three hundred four
  - Thirty-one crore two lakh twenty-one thousand five hundred six
  - Four crore five lakh seventy-one thousand two hundred five
  - Forty crore twenty-seven lakh two thousand six hundred eighty-three
  - Eighty-two lakh forty thousand five hundred four
- Put commas to separate the periods and write the number names

Numbers	Numbers with commas	Number names
(a) 40530217		
(b) 132305604		
(c) 81754008		
(d) 8532562		
(e) 30852650		





3. Write the following numbers.
  - (a) The largest 7-digit number
  - (b) The smallest 8-digit number
  - (c) The smallest 7-digit number having 3 different digits
  - (d) The difference between the largest 8-digit number and the smallest 7-digit number
4. Write the place value of the underlined digits.
  - (a) 85,43,715    4 ten thousands or 40,000    (b) 6,70,539    \_\_\_\_\_
  - (c) 742,313    \_\_\_\_\_    (d) 82,05,35,444    \_\_\_\_\_
  - (e) 8,05,35,673    \_\_\_\_\_    (f) 75,32,54,829    \_\_\_\_\_
5. Find the sum and difference of the place values of the underlined digits in the given numbers.
  - (a) 85,43,65,930    (b) 29,82,43,926    (c) 9,16,48,532    (d) 14,83,16,526
6. Write the following numbers in the expanded form.
  - (a) 85,34,917    (b) 3,72,05,415    (c) 7,82,54,251    (d) 18,71,32,815
7. Write the following numbers in the standard form.
  - (a) 5,00,000 + 20,000 + 3,000 + 40 + 2
  - (b) 8,00,00,000 + 70,00,000 + 4,00,000 + 10,000 + 3,000 + 500 + 80 + 2
  - (c) 4 crores + 3 ten lakhs + 7 lakhs + 6 ten thousands + 2 thousands + 5 hundreds + 1 ten + 3 ones
  - (d) 2 ten crores + 3 crores + 4 lakhs + 7 ten thousands + 5 hundreds + 6 tens + 2 ones
  - (e) 8 ten lakhs + 3 lakhs + 4 ten thousands + 2 thousands + 7 hundreds + 2 tens + 3 ones

## International System of Numeration

A different system of numeration is practiced in most other countries of the world. It is known as the International System of Numeration. You may remember this system from your previous class. We shall revise it and use it to write large numbers.

The International place value chart looks like this.

MILLIONS			THOUSANDS			ONES		
Hundred millions (HM)	Ten millions (TM)	Millions (M)	Hundred thousands (HTh)	Ten Thousands (TTh)	Thousands (Th)	Hundreds (H)	Tens (T)	Ones (O)

The number 18345215 is separated as 18,345,215 and is read as eighteen million three hundred forty-five thousand two hundred fifteen.

**Example 6:** Write the numeral for thirty-two million four hundred five thousand six hundred eighty-eight.

**Solution:** The numeral for the above number is 32,405,688.





## EXERCISE 1.2

1. Put commas to separate the periods according to the International system and write the corresponding number names.

	Numbers	Numbers with commas	Number names
(a)	2531786		
(b)	13275196		
(c)	8203005		
(d)	105327550		
(e)	83005389		

2. Write the numeral for each of the following.

- Four million two hundred twenty-three thousand six hundred forty-six
- Seventy million
- Thirty-six million four thousand one hundred ninety-two
- Seven hundred fifty-three million forty-two thousand eight hundred ninety-three
- Five million four hundred sixty-three thousand two hundred fifty-one

3. Fill in the blanks.

- |                             |                              |
|-----------------------------|------------------------------|
| (a) 1 million = _____ lakh  | (b) 10 crore = _____ million |
| (c) 50 lakh = _____ million | (d) 50 crore = _____ million |
| (e) 5 crore = _____ million | (f) 5 million = _____ lakh   |

4. Write the numeral and its corresponding name in the International system of numeration.

- Three crore fifty-five lakh seventeen thousand four hundred thirty-three
- Two crore sixty-five thousand seven hundred ninety
- Four lakh ninety-eight thousand two hundred sixty-four

5. Write the numeral for the following.

- One more than one million
- One less than ten million
- One more than hundred thousand
- Ten less than ten thousand
- Hundred more than ten million
- Thousand less than hundred million





6. Write the given numbers and their number names in both Indian and International systems of numeration.

	Number	Indian system	International system
(a)	234544		
(b)	3458901		
(c)	74533215		
(d)	231743822		
(e)	506397451		

### Predecessor and Successor

The successor of a number is obtained by adding 1 to it. For example, the successor of 1,23,445 is  $1,23,445 + 1 = 1,23,446$ .

The predecessor of a number is obtained by subtracting 1 from it. For example, the predecessor of 34,213,211 is  $34,213,211 - 1 = 34,213,210$ .

#### Mental Maths

What is the predecessor of successor of 3,49,891?



### Comparison and Ordering of Numbers

While comparing numbers, remember the following points.

- A number which has more digits is greater. For example,  $29,432 > 9,807$
- When two numbers have the same number of digits, start comparing from the extreme left, i.e., the highest place value and then move right to the smaller place values.

For example,

2,45,562	2,45,585	(digits at the lakhs place are same)
2,45,562	2,45,585	(digits at the ten thousands place are same)
2,45,562	2,45,585	(digits at the thousands place are same)
2,45,562	2,45,585	(digits at the hundreds place are same)
2,45,562	2,45,585	(digits at the tens place are different 6 tens < 8 tens)

Thus,  $2,45,562 < 2,45,585$ .

You can even use this shortcut method.

Place the numbers one below the other. Mark a tick for the same digit and a cross for different digits.

$$6 < 8$$

$$2,45,562 < 2,45,585$$

✓	✓	✓	✓	×	
2	4	5	5	6	2
2	4	5	5	8	5





**Example 9:** Which is greater—2,03,544 or 43,809?

**Solution:** Since 2,03,544 has 6 digits while 43,809 has 5 digits,  $2,03,544 > 43,809$ .

**Example 10:** Use the shortcut method to compare 6,23,73,478 and 6,23,73,748.

✓	✓	✓	✓	✓	✗		
6	2	3	7	3	4	7	8
6	2	3	7	3	7	4	8

**Solution:** Since  $4 < 7$ ;  $6,23,73,478 < 6,23,73,748$

**Example 11:** Arrange the following numbers in ascending and descending order.

8,06,13,408    83,43,999    13,00,55,444    7,89,21,036

- Solution:**
- 83,43,999 has the least number of digits. Thus, it is the smallest number.
  - 13,00,55,444 has the maximum number of digits. Thus, it is the biggest number.
  - As 8,06,13,408 and 7,89,21,036 have the same number of digits, let's compare them.

✗							
8	0	6	1	3	4	0	8
7	8	9	2	1	0	3	6

Since  $8 > 7$ ;  $8,06,13,408 > 7,89,21,036$

The numbers when arranged in the descending order are,

$13,00,55,444 > 8,06,13,408 > 7,89,21,036 > 83,43,999$

The numbers when arranged in the ascending order are,

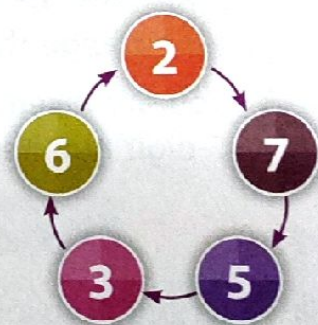
$83,43,999 < 7,89,21,036 < 8,06,13,408 < 13,00,55,444$

## Juggling with Numbers

Look at the given digits. Using each one of them, we can form many 5-digit numbers by arranging them in different order.

23,567; 23,576; 23,657; 23,675; 23,756; 23,765; 25,367; 25,637; 25,673; 25,736; 25,763; 26,357; 26,375; 26,537; 26,573; 26,735; 26,753; 27,356; 27,365; 27,536; 27,563; 27,635; 27,653; ...  
(120 numbers)

The smallest 5-digit number formed by the digits 2, 3, 5, 6 and 7 is 23,567 and the largest 5-digit number formed is 76,532.



**Example 12:** Using the digits 4, 6, 9, 0, 1, 2 and 8 only once, form the largest and the smallest possible number of 7-digits.

**Solution:** The largest possible number is obtained by arranging the digits in the descending order which gives us 9864210.

The smallest possible number is obtained by arranging the digits in the ascending order. However, we cannot begin with zero as this will give us a 6-digit number. Thus, the required number is 1024689.



### EXERCISE 1.3

1. Compare the pair of numbers given below.

(a) 25,434  52,434

(b) 8,33,409  92,489

(c) 5,36,785  5,38,785

(d) 83,42,000  9,02,44,389

(e) 13,05,99,318  8,66,92,439

(f) 94,92,085  4,94,93,136

2. In an auto expo in Bengaluru, some new cars were showcased. Their prices are mentioned below.



A

₹ 13,05,382



B

₹ 2,03,45,500



C

₹ 89,32,000



D

₹ 4,45,89,414

Compare the prices of the cars.

(a) (i) Car A  Car C

(ii) Car D  Car B

(iii) Car C  Car B

(iv) Car D  Car A

(b) Which is the most expensive car?

(c) Which car is least expensive?

(d) Arrange the prices of the cars in descending order.

3. You are given the following 7 digits. Use them to form the smallest and the largest 7-digit numbers. Each digit must be used only once.

2

8

1

3

4

5

7

4. Write the following numbers.

(a) the largest number of 6 digits having 3 different digits

(b) the greatest 7-digit number having 3 in the hundreds place

(c) the predecessor of 9 lakh

(d) the successor of 99 lakh

5. Write in ascending order using symbols.

(a) 32,432; 3,22,431; 23,413; 34,341

(b) 40,000; 4,10,001; 14,004; 1,41,004

(c) 5,87,431; 6,78,301; 75,43,891; 8,20,091

(d) 3,94,36,888; 3,84,36,888; 3,86,36,888



6. What number comes between the given numbers?

(a) 89,43,500

89,43,502

(b) 3,43,46,999

3,43,47,001

(c) 12,00,00,000

12,00,00,002

## Rounding Off Numbers

A newspaper report read, 'About 4 lakh tickets were sold for the Commonwealth Games'.

Do you think it was the exact number of tickets sold? No, the actual number may have been 3,89,456 but often we round off numbers as an estimate.

We round off numbers to the nearest tens, hundreds, thousands and so on.

### Rounding off to the nearest 10

To round off a number to the nearest ten, look at the digit at the ones place.

- If the digit at the ones place is 4 or less, then place a zero at the ones place and let the digit at the tens place remain as it is.
- If the digit at the ones place is 5 or more, then place a zero at the ones place. Also add 1 to the digit at the tens place.

**Example 13:** Round off (a) 45,362 and (b) 3,89,427 to the nearest 10.

**Solution:** (a) 45,362 is rounded off to 45,360 since the digit at the ones place is 2 which is less than 5.

(b) 3,89,427 is rounded off to 3,89,430 since the digit at the ones place is 7 which is more than 5.

### Rounding off to the nearest 100

To round off a number to the nearest hundred, look at the digit at the tens place.

- If the digit at the tens place is 4 or less, then place zeros at the tens and ones place. The digit at the hundreds place remains the same.
- If the digit at the tens place is 5 or more, then place zeros at the tens and ones place. Add 1 to the digit at the hundreds place.

**Example 14:** Round off (a) 2,54,341 and (b) 4,76,586 to the nearest 100.

**Solution:** (a) 2,54,341 is rounded off to 2,54,300 because the digit at the tens place is 4.

(b) 4,76,586 is rounded off to 4,76,600 because the digit at the tens place is 8.

### Mental Maths

Which of these numbers when rounded off to the nearest hundred will become 400?

349, 378, 415, 464





## Rounding off to the nearest 1,000

To round off a number to the nearest thousand, look at the digit at the hundreds place.

- If the digit at the hundreds place is 4 or less, then place zeros at the hundreds, tens and ones place. Keep the digit at the thousands place as it is.
- If the digit at the hundreds place is 5 or more, then place zeros at the hundreds, tens and ones place. Also, add 1 to the digit at the thousands place.

**Example 15:** Round off (a) 62,53,274 and (b) 85,63,901 to the nearest 1,000.

**Solution:** (a) 62,53,274 is rounded off to 62,53,000 as the digit at the hundreds place is 2.  
(b) 85,63,901 is rounded off to 85,64,000 as the digit at the hundreds place is 9.

**Example 16:** Round off 38,456 to the nearest (a) 10, (b) 100 and (c) 1,000.

**Solution:** (a) nearest 10      38,456  $\longrightarrow$  38,460  
(b) nearest 100      38,456  $\longrightarrow$  38,500  
(c) nearest 1,000      38,456  $\longrightarrow$  38,000

### EXERCISE 1.4

1. Look at each number. Tick the nearest 10 from the boxes.

(a) 16 

10
20

(b) 87 

90
80

(c) 375 

370
380

(d) 1,687 

1,690
1,680

(e) 43,297 

43,290
43,300

(f) 3,85,213 

3,85,210
3,85,220

2. Round off the given numbers to the nearest 100, 1,000 and 10,000.

Number	Nearest 100	Nearest 1,000	Nearest 10,000
51,357			
4,17,504			
9,55,724			
83,78,209			
3,76,42,555			



3. Choose the correct option.

(a) 253 rounded off to the nearest 10 is:

(i) 250

(ii) 240

(iii) 260

(iv) 255

(b) 781 rounded off to the nearest 100 is:

(i) 790

(ii) 780

(iii) 800

(iv) 700

(c) 1,855 rounded off to the nearest 100 is:

(i) 1,860

(ii) 1,850

(iii) 1,800

(iv) 1,900

(d) 35,810 rounded off to the nearest 1,000 is:

(i) 36,000

(ii) 35,000

(iii) 35,500

(iv) 35,800

(e) 5,26,433 rounded off to the nearest 1,000 is:

(i) 6,00,000

(ii) 5,00,000

(iii) 5,26,000

(iv) 5,27,000

### Word Problems

1. Rahul's landline number is 26234875. Write its number name both in Indian and International system.
2. Which is the largest 8-digit number? If we add 1 to it, what will it become?
3. Write the smallest and the largest 9-digit number that can be formed using the digits 6, 2, 0, 8, 9, 1, 4, 7 and 3. Round off both the numbers to the nearest 1,000.
4. Write the smallest and the largest 5-digit numbers that can be formed using the digits 5, 3, 0, 8 and 7 so that no digit is repeated.
5. The radius of the sun is approximately 6,95,000 km. Write the number name in the International number system.
6. The distance of the moon from the earth is approximately 38,44,67,000 m. Write the number name in the Indian number system.
7. The height of Mount Everest is 8,848 m. Round it off to the nearest 1,000.
8. What is the number 2 more than the smallest 9-digit number?
9. Total cash available in a bank is ₹ 2 crore 48 thousand 7 hundred and twenty. Write the amount in numerals using the Indian and International place value systems.
10. Write the smallest and the largest 7-digit numbers that can be formed using the digits 6 two times, 0 once, 5 twice, 3 and 9 only once.
11. Write the smallest odd number that can be formed using the digits 8, 7, 5, 3, 0, 2, 1, 4.
12. Write the successor and the predecessor of the greatest 6-digit number.
13. The population of city A is 50,68,973, city B is 50,83,214 and city C is 51,29,860. Arrange them in ascending order. Which city has the largest population?